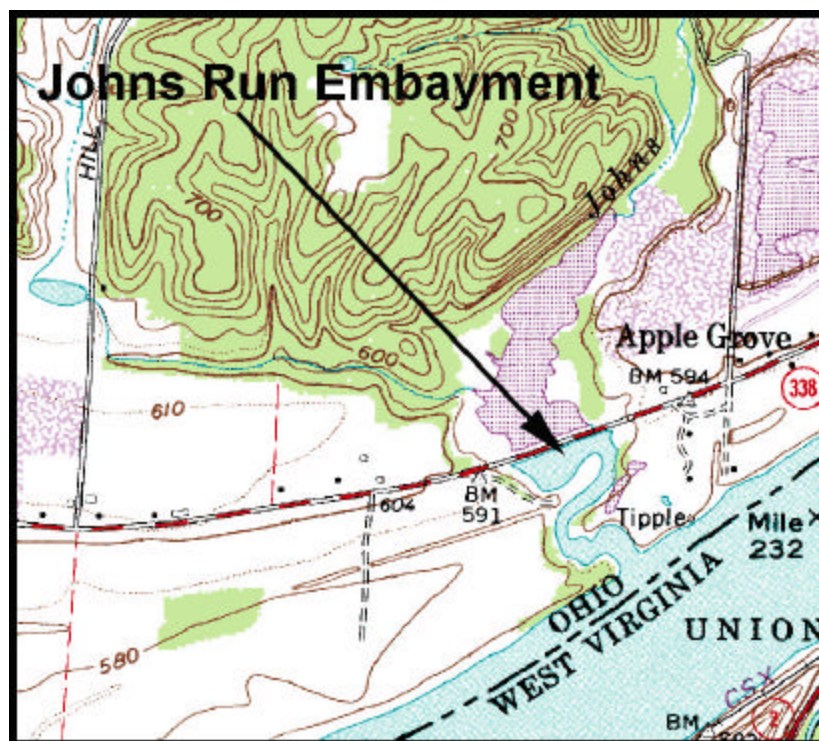


## JOHNS RUN EMBAYMENT (OH-20)

### 1.0 Location

The proposed Johns Run Embayment project area is located in Meigs County, Ohio approximately 6.3 miles south southeast of Racine, Ohio near the small community of Apple Grove, Ohio. The project site is within the Ohio River Racine Pool. The mouth of Johns Run Embayment enters the Ohio River at Ohio River Mile (ORM) 232.2. The project site is within the jurisdiction of the Huntington District, U.S. Army Corps of Engineers (USACE).



### 2.0 Project Goal, Description, and Rationale

The primary goals of the Johns Run Embayment project are to provide deep water off-channel (slackwater) aquatic habitat that will provide over-wintering habitat for fishes in the Ohio River. Enhanced over-wintering habitat along with increased habitat diversity would improve species diversity, facilitate a sustained fishery resource, and improve the recreational fishery.



Deep water habitat will be created by dredging a channel that is approximately 10-12 feet deep from the mouth of Johns Run at ORM 232.2 to the State Route 338 crossing of Johns Run. The area to be dredged will be a sinuous channel that restores deep water connectivity to the upstream portion of the embayment.



### 3.0 Existing Conditions

**Terrestrial/Riparian Habitat:** The banks of Johns Run embayment are populated with a band of riparian trees. The dominant species present in the stand include box elder (*Acer negundo*), black willow (*Salix nigra*), and silver maple (*Acer saccharinum*). To the east of the embayment, there is a commercial sand and gravel operation (Martin Marietta Materials Inc.), and behind the narrow riparian band to the west, the terrestrial habitat is agricultural, predominantly row crops. In the upstream reaches of the embayment to the north, the terrestrial habitat in the Johns Run watershed is predominantly upland forest.

**Aquatic Habitats:** The Johns Run embayment is a shallow embayment with depths that range from 1-4 feet. The average water depth in the embayment is less than two feet. The banks are characterized by mud, and the bottom substrates are composed primarily of silt, mud, and organic matter. The embayment has become filled with silt primarily from the deposition associated with silt-laden Ohio River waters, especially from flood events. Sediments and debris from the Johns Run watershed may have also contributed to the siltation.



Channel through Johns Run Embayment.

Since this embayment is very shallow with relatively clear water, the habitat conditions are conducive to the production of aquatic macrophytes. Much of the embayment is populated with submersed aquatic plants such as coontail (*Ceratophyllum demersum*), pondweeds (*Potamogeton* spp.), floating seedbox (*Ludwigia peploides*), and others.

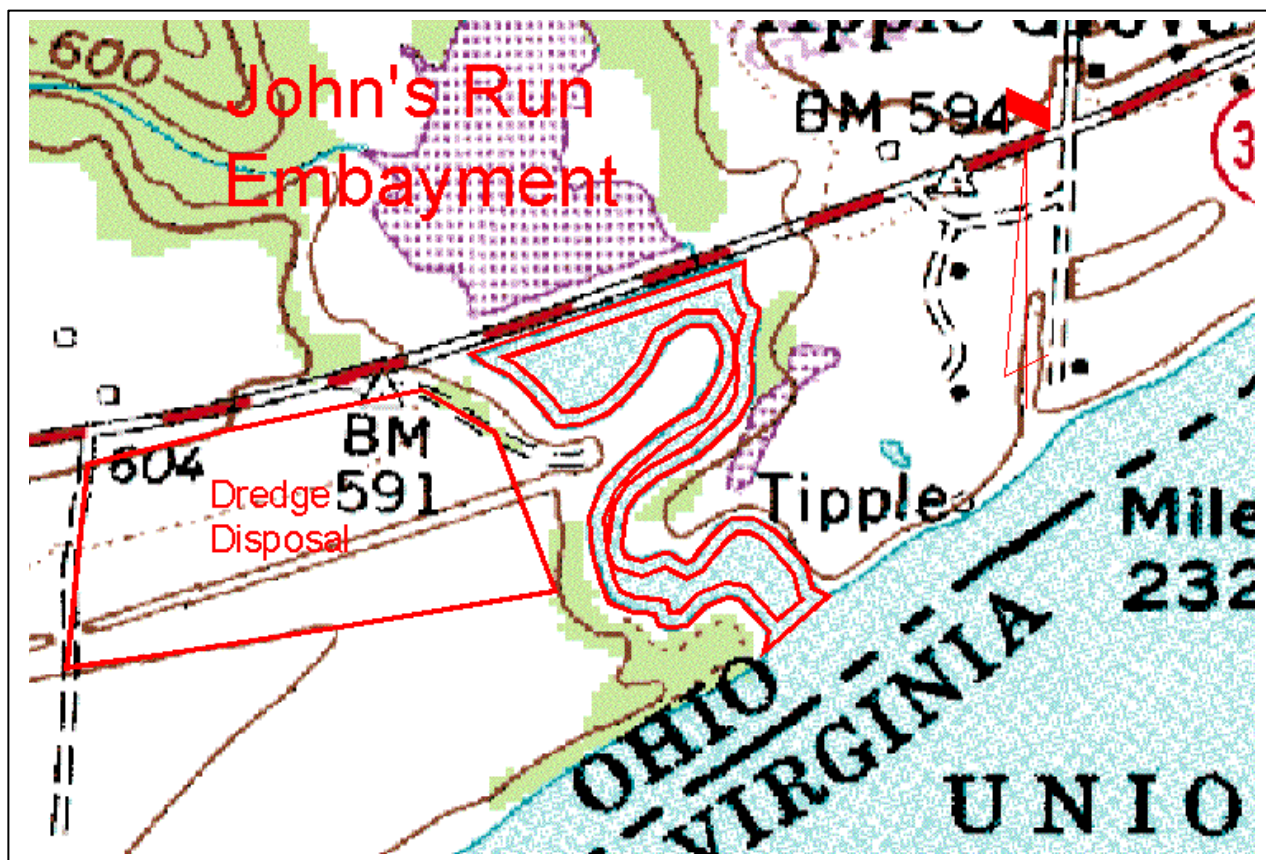
**Wetlands:** The Johns Run embayment is very shallow due to siltation, and a portion of the embayment bottom is exposed annually during the growing season. The mudflats become populated with a variety of wetland plants. The exposed portions of the site produce herbaceous emergent plants such as smartweeds (*Polygonum* spp.), rushes (*Juncus* spp.), sedges (*Carex* spp.), flatsedges (*Cyperus* spp.), and cattails (*Typha* spp.). The shallow littoral areas are also populated with a variety of emergent and submergent wetland plants. It is likely that most of the Johns Run embayment, with the exception of the deepest water areas, would be considered jurisdictional.



Emergent wetland vegetation in Johns Run Embayment.

**Federally-Listed Threatened and Endangered Species:** According to the U.S. Fish and Wildlife Service (USFWS), there is one federally-listed endangered species known to occur in Meigs County, Ohio. The pink mucket pearly mussel (*Lampsilis abrupta*) is a freshwater mussel that was listed as endangered in June 1976 (USFWS, 1998). Although life history information on the pink mucket is unknown, the pink mucket is strictly an Ohioan or Interior Basin species found mainly in the Tennessee, Cumberland, and Ohio River systems. The pink mucket is typically found in medium to large rivers in habitats that range from silt to boulders substrates in water depths that range from 0.5 to 8.0 meters. The species is generally associated with moderate to fast flowing water (USFWS, 1985 and USFWS, 1997). There does not appear to be suitable habitat for this species in the immediate vicinity of the project area.

#### 4.0 Project Diagram



#### 5.0 Engineering Design, Assumptions, and Requirements

##### 5.1 Existing Ecological/Engineering Concern

The Johns Run embayment has filled with sediments due to several factors. These factors include: raised water levels from the impoundment of the Racine Pool; deposition of Ohio River silt-laden waters, especially during flood events; wave action from barge traffic; and headwater sediments from the Johns Run watershed.

##### 5.2 Embayment Dredging

Maintenance dredging of the mouth of the embayment is required to provide deep water connectivity to the remainder of the embayment and to provide a suitable depth for boater access. An estimated 92,500 cubic yards of silty-clay

material would be dredged to restore depths of 9-12 feet in the embayment mouth. A dredge disposal site is adjacent to the embayment, with a natural swale. A small levee, 4.5 feet high and 425 feet in length, would be constructed at the designated disposal site for dewatering.

### 5.3 Planning/Engineering Assumptions

- ◆ A small auger head dredge would be used, and the material would be pumped directly to the disposal site.
- ◆ Bottom side slopes will be reshaped to a 3:1.
- ◆ All the material required for the levee would be taken from on site.
- ◆ A 2,320 gallons per minute (gpm) centrifugal pump would be used for dewatering. Dewatering would commence 18 days after dredging begins to prevent the dewatering basin from exceeding capacity.

## 6.0 Cost Estimate (Construction)

**Dredging** - Engineering costs for the proposed project are contained on Table 1. A detailed MCACES cost estimate for the proposed project is included in Appendix C.

<b>Table 1. Engineering Costs.</b>	
<b>Item</b>	<b>Cost</b>
Dredging	\$116,000
Levee	\$1,200
Dewatering	\$51,000
Mobilization	\$15,200
<b>TOTAL</b>	<b>\$183,400</b>

## 7.0 Schedule

**Johns Run Embayment Dredging:** The estimated construction time for this project is shown on Table 2.

<b>Table 2. Construction Schedule.</b>	
<b>Item</b>	<b>Time</b>
Dredging	135 Days
Levee	6 Days
Dewatering	50 Days
Mobilization	4 Days
<b>TOTAL</b>	<b>195 Days</b>

## 8.0 Expected Ecological Benefits

**Terrestrial/Riparian Habitat:** The impacts of the Johns Run Embayment rehabilitation/dredging project would be primarily in-stream. There would be no reasonably foreseeable beneficial impacts to terrestrial/riparian resources as a result of implementing the proposed project.

**Aquatic Habitats:** Long-term beneficial impacts to aquatic resources would be anticipated as a result of implementing the proposed project. Dredging of the mouth of Johns Run would result in long-term beneficial impacts to fishes due to the improved/deepened access to the Johns Run embayment. Fishes would be allowed free access to the embayment, especially during low flow periods. Habitat requirements for fishes change seasonally and improved access to the



embayment would be considered beneficial. Restoring/increasing the depths of the embayment would provide over-wintering habitat for fishes, especially sport fish such as black basses.

**Wetlands:** There would be no beneficial impacts to jurisdictional wetlands as a result of implementing the proposed project.

**Federally-Listed Threatened and Endangered Species:** There would be no reasonably foreseeable beneficial impacts to federally-listed threatened or endangered species as a result of implementing the proposed project.

**Socioeconomic Resources:** There would be short-term and long-term beneficial impacts to socioeconomic resources as a result of implementing the proposed project. The short-term beneficial impacts would be related to costs and local expenditures associated with the construction/dredging of the embayment. Long-term socioeconomic benefits would be realized through improved recreational fishing opportunities. Long-term indirect beneficial impacts will be realized through local expenditures for fishing tackle, hunting and fishing gear, food, gas, and other associated needs.

## **9.0 Potential Adverse Environmental Impacts**

**Terrestrial/Riparian Habitat:** There would be short-term adverse impacts to terrestrial/riparian resources as a result of implementing the proposed project. There would be short-term adverse impacts to terrestrial species from construction-related noise and disturbance. Considering the existing high volume of disturbance from the adjacent sand/gravel operation, barge traffic along the Ohio River and recreational boat usage in the area, it is likely that the increased noise/disturbance impacts would be very minor. There would be short-term adverse impacts to the agricultural lands that lie to the west of the embayment. This area would serve as the dredge disposal site. Adverse impacts to this area would be considered short term, because it is assumed that the site can be farmed following the dewatering and grading of the spoil material.

**Aquatic Habitats:** There would be a potential for adverse affects to aquatic species, especially immobile benthic invertebrates and young-of-the-year fishes during the dredging of the Johns Run embayment. Localized populations of benthic invertebrates could be directly disturbed during the construction operation. In addition, sensitive aquatic species immediately downstream from the site could be adversely impacted by degraded water quality associated with displaced sediments, however these adverse impacts to aquatic species would be short term.

The shallow water and vegetated habitats in Johns Run embayment provide cover, spawning habitat, and nursery habitat for fishes. The structure associated with emergent and submersed vegetation provides habitat for aquatic invertebrates and cover for fishes, especially young-of-the-year (Wege, 1979; Killgore, 1989; and Eggering, 1991). The loss of littoral and submersed aquatic vegetative habitats would be considered adverse for invertebrates and some fishes, especially young-of-the-year. Considering the overall size of the embayment compared the actual amount of dredging envisioned, these impacts would not be severe.

**Wetlands:** There would be long-term adverse impacts to jurisdictional wetlands as a result of implementing the proposed project. A portion of the herbaceous emergent wetlands that populate the mudflats in the bottom of the Johns Run embayment would be removed during the dredging operation. Adverse impacts to jurisdictional wetlands could be minimized by restricting the dredging to the existing Johns Run creek-channel, which would leave most of the exposed mudflat intact.

**Federally-Listed Threatened and Endangered Species:** There would be a very slight potential for adverse effects to the pink mucket pearly mussel during the dredging of the Johns Run embayment. Mussels immediately downstream from the construction/dredge site could be adversely impacted by perturbed water quality conditions associated with displaced sediments. Since the pink mucket pearly mussel needs moderate to fast flowing water (USFWS, 1985 and USFWS, 1997) and since the Johns Run embayment is considered a slackwater habitat with a silt/muck bottom, it is highly unlikely that this species is found in the embayment.

**Socioeconomic Resources:** There would be no reasonably foreseeable adverse socioeconomic impacts as a result of implementing the proposed project.

### 10.0 Mitigation

Adverse impacts to jurisdictional wetlands could be minimized by restricting dredging to the existing Johns Run creek-channel, which would leave most of the exposed mudflat intact. It is likely that the removal/destruction of jurisdictional wetlands would require in-kind mitigation.

Minor impacts associated with site dredging and spoil placement may occur during the construction of this project, however, no significant adverse impacts are expected. The use of best management practices and proper construction techniques would minimize adverse water quality impacts.

### 11.0 Preliminary Operation and Maintenance Costs:

**Maintenance Dredging** Operation and Maintenance costs are summarized on Table 3.

<b>Table 3. Operation and Maintenance Costs</b>		
<b>Maintenance</b>	<b>Frequency</b>	<b>Costs</b>
Maintenance Dredging	25 years	\$36,700

### 12.0 Potential Cost Share Sponsor(s)

- ◆ State of Ohio
- ◆ barge/towing industry

### 13.0 Expected Life of the Project

It is anticipated that the dredging operation would provide meaningful depths for fishes for approximately 25-30 years before additional dredging would be necessary.

### 14.0 Hazardous, Toxic, and Radiological Waste Considerations

Potential impacts of hazardous, toxic, and radiological waste (HTRW) at the site were visually assessed during a site visit.

**Site Inspection Findings.** The project site is located near the mouth of Johns Run at Ohio River mile 232.2 in Meigs County, Ohio. The nearest towns are Apple Grove, Ohio and Millwood, West Virginia.

The following environmental conditions were considered when conducting the June 8, 1999 project area inspection:

- ◆ Suspicious/Unusual Odors;
- ◆ Discolored Soil;
- ◆ Distressed Vegetation;
- ◆ Dirt/Debris Mounds;
- ◆ Ground Depressions;
- ◆ Oil Staining;
- ◆ Above Ground Storage Tanks (ASTs);
- ◆ Underground Storage Tanks (USTs);
- ◆ Landfills/Wastepiles;
- ◆ Impoundments/Lagoons;
- ◆ Drum/Container Storage;
- ◆ Electrical Transformers;
- ◆ Standpipes/Vent pipes;

- ◆ Surface Water Discharges;
- ◆ Mining/Logging; and
- ◆ Power or Pipelines;
- ◆ Other

An unfinished pier is in the project area. A sand/gravel bar is to the east and areas of wetland, riparian and forest habitat is to the north of the project area. None of the environmental conditions listed above were observed in the project area.

### 15.0 Property Ownership & River Access

Selected data on properties immediately adjacent to the concept site were collected from the county courthouse for each site. Data collected included map and parcel identification number, property owner's name and mailing address, acreage of the potentially affected parcel, and market value of the parcel. This procedure involved obtaining a plat or parcel map of the site and surrounding area which identified each parcel with a corresponding map and parcel number. The map\parcel identification number was subsequently used to determine the property owner's name and mailing address from records in the County Assessor's or County Auditor's office.

The market value of each parcel as contained in the property tables reflects the assessed valuation to supposedly market value ratio used by the State for taxation purposes. These assessed values reflect 1998 assessments. The assessed valuation ratio is 35 percent for Ohio.

The above ratio was used to approximate the market value of each property. However, the resultant market value calculated under the above procedure may be below the actual value of the land in the real market. Local real estate brokers could provide a more accurate estimate of actual land values.

The collected property data indicate that private agricultural and commercial land is adjacent to Johns Run embayment. Dredging equipment for the project can access Johns Run from the Ohio River. Dredge disposal is proposed to occur on adjacent agricultural lands. Access to these lands will be required for the proposed project (See Table 4).

<b>Table 4. Property Characteristics</b>				
<b>Site Name: John's Run</b>				
<b>Location: Meigs County, Ohio</b>				
<b>Map/Parcel Number</b>	<b>Owner</b>	<b>Mailing Address</b>	<b>Market Value</b>	<b>Acreage</b>
05/011-001	Martin Marietta Materials, Inc.	2710 Wycliff Road Raleigh, North Carolina 27607	\$112,343	100 .00
05/011-002	Richards & Sons, Inc.	49947 SR 338 Racine, Ohio 45771	\$20,828	100.00
05/011-003	Richards & Sons, Inc.	49947 SR 338 Racine, Ohio 45771	\$219,143	100.00
05/011-004	Richards & Sons, Inc.	49947 SR 338 Racine, Ohio 45771	\$108,142	99.09
* Denotes improvements on property.				

**16.0 References**

<b>References:</b>	
Eggering, 1991	Eggering, L. F. 1991. Thesis: The affect of aquatic macrophytes on the available prey/predator ratio of fishes in the littoral area of Kentucky Reservoir. Murray State University, Murray, Kentucky.
Killgore, 1989	Killgore, K. J., R. P. Morgan II, and N. B. Rybicki. 1989. Distribution and abundance of fishes asociated with submersed aquatic plants in the Potomac River. North American Journal of Fisheries Management.
USFWS, 1985	U.S. Fish and Wildlife Service, 1996. Recovery plan for the pink mucket pearly mussel. Atlanta, Georgia.
USFWS, 1997	U.S. Fish and Wildlife Service, 1997. Species Accounts: pink mucket pearly mussel ( <i>Lampsilis abrupta</i> ).
USFWS, 1999	U.S. Fish and Wildlife Service, July 8, 1998. Federally Endangered, Threatened and Proposed Species, Ohio.
Wege, 1979	Wege, G. J. and R. O. Anderson. 1979. Influence of artificial structures on largemouth bass and bluegills in small ponds. North Central Division American Fisheries Society Special Publication 6.



**APPENDIX A      Threatened & Endangered Species**

**APPENDIX B Plan Formulation and Incremental Analysis Checklist****Project Site Location:**

The proposed Johns Run Embayment project area is located in Meigs County, Ohio approximately 6.3 miles south southeast of Racine, Ohio near the small community of Apple Grove, Ohio. The project site is adjacent to the Ohio River Racine Pool, and the mouth of the Johns Run Embayment enters the Ohio River at Ohio River Mile (ORM) 232.2. The project site is within the jurisdiction of the Huntington District, U.S. Army Corps of Engineers (USACE).

**Description of Plan Selected:**

The primary goals of the Johns Run Embayment project are to provide deep water off-channel (slackwater) aquatic habitat that will provide over-wintering habitat for fishes in the Ohio River. Enhanced over-wintering habitat couple with increased habitat diversity would correlate with a sustained fishery resource and an improved recreational fishery.

Deep water habitat will be created by dredging a channel that is approximately 10-12 feet deep from the mouth of Johns Run at ORM 232.2 to the State Route 338 crossing of Johns Run. The area to be dredged will be a sinuous channel that restores deep water connectivity to the upstream portion of the embayment.

**Alternatives of the Selected Plan:**

Smaller Size Plans Possible? Yes and description

Reduce the amount of dredging.

Larger Size Plan Possible? Yes and description

Increase the amount of dredging.

Other alternatives? No

Restore/Enhance/Protect Terrestrial Habitats? ☐ Objective numbers met ☐

Restore, Enhance, & Protect Wetlands? ☐ Objective numbers met ☐

Restore/Enhance/Protect Aquatic Habitats? ☒ Objective numbers met ☐ A1, A5, A6

Type species benefited: Fishes (especially black basses) and invertebrates including mussels.

Endangered species benefited: No

Can estimated amount of habitat units be determined: ? acres deepened by dredging

**Plan acceptable to Resources Agencies?**

U.S. Fish & Wildlife Service?

State Department of Natural Resources? Yes – Ohio DNR

Plan considered complete?

Connected to other plans for restoration?

Real Estate owned by State Agency?

Federal Agency?

Real Estate privately owned? Some adjacent lands are privately owned.

If privately owned, what is status of future acquisition? Acquisition is not necessary.

**Does this plan contribute significantly to the ecosystem structure or function requiring restoration? What goal or values does it meet in the Ecosystem Restoration Plan?**

Provide habitat diversity, over-wintering habitat, and winter velocity shelters for fishes.

**Is this restoration plan a part of restoration projects planned by other agencies? (i.e. North American Waterfowl Management Plan, etc.)**

No

**In agencies opinion is the plan the most cost effective plan that can be implemented at this location?**

**Can this plan be implemented more cost effectively by another agency or institution?**

**Yes / No**

**Who:**

**From an incremental cost basis are there any features in this plan that would make the project more expensive than a typical project of the same nature? For embayment type plans is there excessive haul distance to disposal site? More expensive type disposal? Spoil that requires special handling/disposal?**

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**Potential Project Sponsor:**

**Government Entity:** \_\_\_\_\_

**Non-government Entity** \_\_\_\_\_

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Corps Contractor \_\_\_\_\_ Date \_\_\_\_\_

U.S. Fish & Wildlife Representative \_\_\_\_\_ Date \_\_\_\_\_

State Agency Representative \_\_\_\_\_ Date \_\_\_\_\_

U.S. Army Corps of Engineers Representative \_\_\_\_\_ Date \_\_\_\_\_

## **Terrestrial Habitat Objectives**

- T1     Riparian Corridors
- T2     Islands
- T3     Floodplains
- T4     Other unique habitats (canebrakes, river bluffs, etc.)

## **Wetland Habitat Objectives**

- W1     Forested Wetlands: Bottomland Hardwoods
- W2     Forested Wetlands: Cypress/Tupelo Swamps and other unique forested wetlands
- W3     Scrub/Shrub Emergent Wetlands: isolated from the river except during high water and contiguous (includes scrub/shrub wetlands in embayments and island sloughs)

## **Aquatic Habitat Objectives**

- A1     Backwaters (sloughs, embayments, oxbows, bayous, etc.)
- A2     Riverine submerged and aquatic vegetation
- A3     Sand and gravel bars
- A4     Riffles/Runs (tailwaters)
- A5     Pools (deep water, slow velocity, soft substrate)
- A6     Side Channel/Back Channel Habitat
- A7     Fish Passage
- A8     Riparian Enhancement/Protection





## OHIO RIVER MAINSTEM ECOSYSTEM RESTORATION PROJECT

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LABOR ID: ORMSSE      EQUIP ID: RG295A  
CREW ID: NAT95A      UPB ID: UP99EA

Currency in DOLLARS

# OHIO RIVER MAINSTEM ECOSYSTEM RESTORATION PROJECT

Tue 24 Aug 1999

U.S. Army Corps of Engineers

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Eff. Date 08/23/99  
Enhancement

PROJECT ORMSSE: ORMSS - Environmental

John's Run Embayment

SETTINGS PAGE 1

04-07. John's Run Embayment

\*\* LINK LISTING \*\*

04-07. John's Run Embayment OPERATOR	LOCAL INPUT	REFERENCE QUANTITY UOM	REF VALUE
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04-07 John's Run Embayment

1.0000 LS

04-07{0603 Fish & Wildlife Facilities and

1.0000 LS

04-07{060373 Habitat & Feeding Facilities

1.0000 LS

04-07{060373}001 Mobilization

D

0.0000 LS

1.0000 0.0000 LS

04-07{060373}002 Dredging

92500.0000 CY

PRODUCTIVITY  
DURATION

90.0000 CY /  
1027.7778

0100 AUGERHD MUDCAT, 8" DISCHARGE DIA D

1027.7778 \*

Multiply by 1.0000 1027.7778 HR

0200 Outside Laborer D

1027.7778 \*

Multiply by 2.0000 2055.5556 HR

0300 Outside Equip. Op. Medium D

1027.7778 \*

Multiply by 1.0000 1027.7778 HR

04-07{060373}003 Levee

1310.4200 CY

PRODUCTIVITY  
DURATION

90.0000 CY /  
14.5602

0100 Excavation

P

1310.4200 CY \*

Multiply by 1.0000 1310.4200 CY

0200 Embankment P

1310.4200 CY \*

Multiply by 1.0000 1310.4200 CY





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Enhancement

DETAILED ESTIMATE

John's Run Embayment

DETAIL PAGE 1

04. Ohio

John's Run Embayment	QUANTY UOM CREW ID	OUTPUT	LABOR
EQUIPMNT MATERIAL OTHER TOTAL COST UNIT			

Ohio

John's Run Embayment

Study Level: Concept

Project Goals:

Dredge mouth of embayment to reestablish depths of 9-12'.

Fish & Wildlife Facilities and  
Sanctuary

Habitat & Feeding Facilities

Mobilization

Dredge		2.00 LS		0.00	5,800
8,700	0	0	14,500 7250.00		
Bull Dozer		2.00 LS		0.00	59
304	0	0	363 181.50		
Vibrating Roller		2.00 LS		0.00	59
304	0	0	363 181.50		

Mobilization					5,918
9,308	0	0	15,226		

Dredging

AUGERHD MUDCAT, 8" DISCHARG	1027.78 HR	M10EL007	1.00	0
48,351	0	0	48,351 47.04	
E DIA				
Outside Laborer	2055.56 HR	X-LABORER	1.00	46,884
0	0	0	46,884 22.81	
Outside Equip. Op. Medium	1027.78 HR	X-EQOPRMED	1.00	20,815
0	0	0	20,815 20.25	

Dredging	92500 CY			67,699
48,351	0	0	116,050 1.25	

# OHIO RIVER MAINSTEM ECOSYSTEM RESTORATION PROJECT

Levee						
Excavation			1310.42 CY	CODTR	410.00	496
118	0	0	614	0.47		
Embankment			1310.42 CY	CODTR	600.00	339
81	0	0	420	0.32		
Compaction			1310.42 CY	COFCA	1900.00	98
6	0	0	104	0.08		
6" lifts, 4 passes						
-----						
Levee			1310.42 CY			934
205	0	0	1,138	0.87		
Dewatering						
PUMP,CENTRF,DW,8"D,2320GPM/			1329.00 HR	P60ML005	1.00	0
11,632	0	0	11,632	8.75		
20'HD						
Assume 2000 gallons of water						
per cubic yard of material						
Outside Equip. Oper Light			1329.00 HR	X-EQOPRLT	1.00	31,830
0	0	0	31,830	23.95		
Outside Laborer			332.25 HR	X-LABORER	1.00	7,578
0	0	0	7,578	22.81		

LABOR ID: ORMSSE      EQUIP ID: RG295A  
 CREW ID: NAT95A      UPB ID: UP99EA

Currency in DOLLARS

# OHIO RIVER MAINSTEM ECOSYSTEM RESTORATION PROJECT

Tue 24 Aug 1999

U.S. Army Corps of Engineers

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PROJECT ORMSSE: ORMSS - Environmental

Enhancement

DETAILED ESTIMATE

John's Run Embayment

DETAIL PAGE 2

04. Ohio

John's Run Embayment		QUANTY UOM		CREW ID	OUTPUT	LABOR
EQUIPMNT	MATERIAL	OTHER	TOTAL COST	UNIT		

Dewatering		43592727	GAL			39,408
11,632	0	0	51,040	0.00		

Habitat & Feeding Facilitie						113,958
69,496	0	0	183,454			

Fish & Wildlife Facilities						113,958
69,496	0	0	183,454			

John's Run Embayment						113,958
69,496	0	0	183,454			

LABOR ID: ORMSSE      EQUIP ID: RG295A  
 CREW ID: NAT95A      UPB ID: UP99EA

Currency in DOLLARS

# OHIO RIVER MAINSTEM ECOSYSTEM RESTORATION PROJECT

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Tue 24 Aug 1999

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Eff. Date 08/23/99

Enhancement

ERROR REPORT

ERROR PAGE 1

U.S. Army Corps of Engineers

PROJECT ORMSSE: ORMSS - Environmental

John's Run Embayment

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No errors detected...

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\* \* \* END OF ERROR REPORT \*

LABOR ID: ORMSSE EQUIP ID: RG295A  
CREW ID: NAT95A UPB ID: UP99EA

Currency in DOLLARS



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# OHIO RIVER MAINSTEM ECOSYSTEM RESTORATION PROJECT

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Tue 24 Aug 1999

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Eff. Date 08/23/99

Enhancement

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John's Run Embayment

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## DETAILED ESTIMATE

DETAIL PAGE

07. John's Run Embayment

0603. Fish & Wildlife Facilities and

73. Habitat & Feeding Facilities

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002.

Dredging.....1

003.

Levee.....1

004.

Dewatering.....1

No Backup Reports...

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